

MODERN APPROACH TO SLOWING THE PROGRESSION OF DIABETIC RETINOPATHY IN TYPE 2 DIABETES MELLITUS

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Abstract: Diabetic retinopathy (DR) is a specific microvascular complication of diabetes mellitus (DM), affecting 1 out of 3 patients with DM. DR remains the leading cause of vision loss in working adults. It is noted that 1 in 10 patients (10.2%) has vision-threatening DR, that is, proliferative diabetic retinopathy (PDR) and/or diabetic macular retinopathy (DMR). The purpose of the work was to study the effect of Traikor on the progression of diabetic retinopathy. Traikor, (fenofibrate) Lipid-lowering drugs that reduce cholesterol and triglyceride levels in the blood serum. 40 patients (40 eyes) with DR aged from 36 to 58 years were examined. Conclusions: Traikor, due to its mechanism of action, helps improve visual functions in patients with DR. It can be used in the complex treatment of patients with diabetes. Fenofibrate significantly slows down the progression of diabetic retinopathy in patients with type 2 diabetes by 60%.

Keywords: diabetic retinopathy, macular edema, diabetes mellitus, fenofibrate.

Relevance

Diabetes mellitus is a global problem, the importance of which is becoming more and more alarming every year, despite the fact that more and more attention is being paid to this issue. The number of cases is rapidly increasing. Today, each of us has a relative or friend who suffers from diabetes. The main reason for the increase in the number of cases is a change in the lifestyle of the population (physical inactivity, poor nutrition, smoking and alcohol abuse), which began in the middle of the last century and continues to this day. If the current state of affairs continues, it is expected that by 2030 the number of cases will double and amount to 20% of the total world population.

Diabetes mellitus is an insidious, disabling disease, dangerous for its complications, which, arising in the absence of timely diagnosis, proper treatment and changes in lifestyle, make a significant contribution to the mortality statistics of the population. Complications of diabetes are the seventh most common cause of death. Diabetic retinopathy (DR) is a specific microvascular complication of diabetes mellitus (DM), affecting 1 out of 3 patients with DM. DR remains the leading cause of vision loss in working adults. It is noted that 1 out of 10 patients (10.2%) has vision-threatening DR, that is, PDR and/or DME. Patients with severe DR have poor quality of life, poor physical, emotional and social well-being, and they use more healthcare resources.

Risk factors for diabetic retinopathy (DR) is the duration diabetes is the main risk factor associated with the development of DR. Among patients over 30 years of age with type 2 diabetes whose duration of diabetes is less than 5 years, 40% of patients taking insulin and 24% of patients not taking insulin have retinopathy. The incidence of DR increases to 84% and 53%, respectively, when the established duration of diabetes is up to 19 years. Proliferative DR develops in 2% of patients with type 2 diabetes with a diabetes duration of up to 5 years and in 25% of patients with a diabetes duration of 25 years or more. Glycemic control is the main modifiable risk factor. Once DR occurs, duration of diabetes becomes a less important risk factor than glycemic control in determining progression of DR. Intensive therapy for hypertension may slow the progression of DR. Management of serum lipids may reduce the progression of DR and the need for therapy.

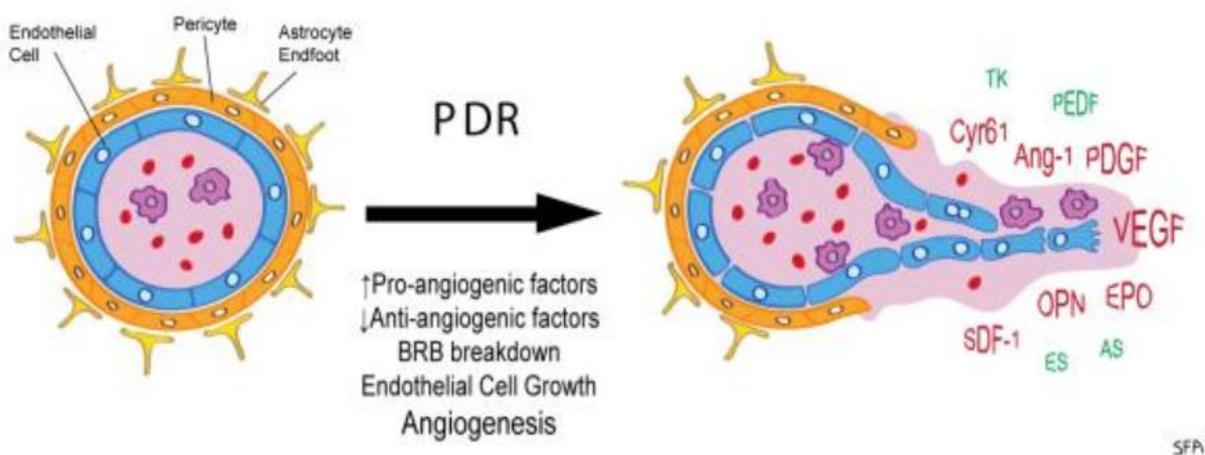
There is less agreement among studies regarding the importance of other factors, such as age, type of diabetes, clotting factors, kidney disease, sedentary lifestyle, inflammatory biomarkers, and use of angiotensin converting enzyme inhibitors.

Screening for diabetic retinopathy carried out with cThe goal of an effective screening program is establish who needs referral to an ophthalmologist for follow-up and treatment and who can simply undergo annual screening. Early detection of retinopathy depends on educating patients with diabetes and their family, friends, and health care providers about the importance of regular eye examinations, even in the absence of symptoms. Patients should be informed that they may have good vision and no ocular symptoms, but may have diagnostic signs of the disease and require treatment. Patients should be educated that early treatment is most effective and should undergo annual eye examinations, even with good vision. Individuals with type 2 diabetes without DR should be encouraged to have annual eye examinations to screen for DR.

Purpose Our study is to study and evaluate the effect of Traikor on the progression of diabetic retinopathy.

Materials and methods: We examined 40 patients (40 eyes) with DR aged from

36 to 58 years old. There were 17 men, 23 women. The preproliferative stage of DR was identified in 12 people, the proliferative stage of DR in 28 people. All patients were monitored by an endocrinologist and received appropriate therapy, against the background of which compensation of carbohydrate and lipid metabolism was observed. The duration of the underlying disease ranged from 10 to 15 years. Of the concomitant diseases, 26 people had hypertension, angiopathy of the lower extremities - in 9 people, cerebrovascular accident - in 7 people, coronary heart disease - in 12 people. All patients underwent visometry, perimetry, tonometry, biomicroscopy, ophthalmoscopy and OCT. All patients were divided into 2 groups: in the main and control groups there were 20 people each (6 people with PPDR and 4 people with PDR) with almost identical visual functions and concomitant diseases. All patients received standard treatment. 16 patients, along with drug treatment, underwent laser photocoagulation of the retina. Patients from main group A were additionally prescribed Trikor 145 mg (1 tablet) x 1 time per day. Traikor, (fenofibrate) Lipid-lowering drugs that reduce cholesterol and triglyceride levels in the blood serum.



VEGF promotes vascular permeability, which leads to plasma leakage across the blood-retinal barrier (BRB) and tissue edema. In proliferative diabetic retinopathy (PDR), increased expression of pro-angiogenic factors and down-regulation of anti-angiogenic factors lead to an imbalance that causes disruption of BRB and non-productive angiogenesis. Proangiogenic factors include VEGF, angiopoietin-2 (Ang-2), osteopontin (OPN), platelet-derived growth factor (PDGF), erythropoietin (EPO), stromal cell-derived factor (SDF-1, CXCL12) and cysteine 61 (CYR61). Antiangiogenic factors include pigment epithelial growth factor (PEDGF), endostatin (ES), angiostatin (AS), and tissue kallikrein (TK). Red indicates up-regulation and green indicates down-regulation. In diabetes mellitus,

the blood-retinal barrier prevents the penetration of large molecules from blood vessels into the retinal tissue. (VEGF – vascular endothelial growth factor promotes vascular permeability, which leads to plasma leakage through the blood-retinal barrier)

Traykor is the only tablet drug with anti-VEGF activity that acts on pathogenesis; unlike dietary supplements and medical products, it affects the cause of DR and helps slow the progression of DR.

Results : The following criteria were assessed against the background of treatment:

The addition of fenofibrate to the standard treatment protocol for DME* helps reduce central macular thickness and improve visual acuity.

Fenofibrate significantly reduced the need for first laser therapy for any maculopathy in type 2 diabetes

Fenofibrate significantly reduced the need for first laser treatment for proliferative DR.

Conclusions:

1. Traykor, thanks to its mechanism of action, helps improve visual functions in patients with DR.
2. Traykor can be used in the complex treatment of patients with diabetes mellitus.
3. Fenofibrate significantly slows down the progression of diabetic retinopathy in patients with type 2 diabetes 60%

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